



**Define What – Describe the green innovation or product that has improved sustainability of an urban environment.**

The vertical rain garden, which has been erected on London's Tooley Street, is a unique project due to the ability to harvest enough rainwater in storage tanks, concealed behind the planting, to sustain the living wall for up to 6 weeks. This innovation allows the plants to absorb the water in a controlled way via capillary action, negating the need for a pressurised irrigation system that would require power and a water supply. The system not only stores water for irrigation, but also attenuates storm water in peak rain periods, which in-turn prevents localised flooding.

Therefore, the wall improves the sustainability of the urban environment in several ways:

- Flood prevention, storm attenuation in peak storm periods.
- SUD benefits.
- A passive structure with no energy demands on region.
- Bringing habitat, bio-diversity & vegetation to a hard area.
- Visual enhancement of urban area.

**Define Why – define why each element was introduced and what specific criteria it was trying to meet.**

The main intention of the original wall, which was part of the Drain London Sustainable Urban Drainage Program, was to reduce localised surface flooding. The second aim was to visually enhance the site area, whilst creating a green corridor.

**Define How. – How does this fit into an urban space and how does it work?**

The vertical rain garden (green wall) is part of an extended programme of Green Infrastructure interventions, in the public realm, in the London Bridge area. Specifically, the green wall was located so as to provide a green link between Potter Fields Park and St. Johns Church Yard. This has now been supplemented with a wild-flower meadow on the adjacent Druid Street, extensive hanging baskets and planters through Tooley Street and a new green pocket park at Queen Elizabeth Gardens. All of these projects have been informed by a Green Infrastructure Audit and Plan that Team London Bridge commissioned in partnership with Cross River Partnership and the Environment team at the Greater London Authority.

**How Much – Does your project have a payback period, does it have a direct impact or savings on energy, carbon, water etc?**

In comparison with a traditional green wall, the vertical rain garden has a direct impact on savings due to the lack of need for a water and power supply. However, the main saving can be seen in the direct impact of flood attenuation preventing damage to the local urban environment, whilst also preventing accidents. But this is a more difficult saving to quantify. No payback base has been calculated for this product.

**Results or Verification – If the project has been monitored, is there any data or report that can be provided?**

Team London Bridge originally trialled a 12m x 2.5m vertical green wall, on Tooley Street, in 2013. This was deemed so successful in terms of greening the area, local business and resident feedback and the more technical SUDs benefits noted above, that Team London Bridge decided to triple the length of the green wall in the spring of 2015. Again, local response has been extremely positive. The green wall is an important feature of Urban Design and Greening Tours that Team London Bridge give on a regular basis to visiting public realm professional, both from the UK and further afield.